

We Claim:

1. A die attach adhesive comprising

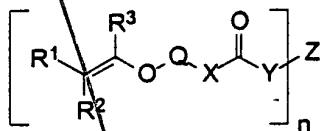
(a) 5 to 30 weight percent of a mixture of a vinyl ether compound

5 containing polar functionality and an electron acceptor compound,

(b) 0.01 to 10.0 weight percent of a free-radical initiator or photoinitiator,

(c) -70 to 95 weight percent of a conductive or nonconductive filler, to a total of 100 weight percent,

10 in which the vinyl ether has the structure



in which

n is 1 to 6;

R¹, R², and R³ are hydrogen, methyl or ethyl;

15 Q is an alkyl or cycloalkyl linear or branched chain having 1 to 12

carbon atoms; an alkyleneoxy chain having 1 to 12 carbon atoms, or aromatic or fused aromatic ring having 3 to 10 carbon atoms and optionally containing the heteroatoms O, N or S;

20 X and Y are independently O, NR¹, or S, with the proviso that both X and Y cannot be oxygen or sulfur;

Z is a branched or linear alkane, which may contain cyclic moieties, a siloxane, a polysiloxane, a C₁ to C₄ alkoxy-terminated siloxane or polysiloxane, a polyether, a polyester, a polyurethane, a poly(butadiene), or an aromatic, polyaromatic, or heteroaromatic group.

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2. The die attach adhesive according to claim 1 in which

R^1 , R^2 , and R^3 are hydrogen,

Q is a linear or branched chain alkyl having 1 to 12 carbon atoms;

and

5 Z is a linear or branched chain alkyl having up to 36 carbon atoms.

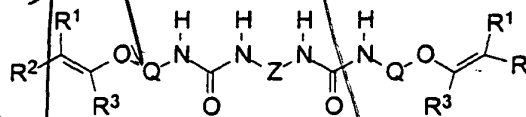
3. The die attach adhesive according to claim 1 in which the filler is a
conductive filler.

10 4. The die attach adhesive according to claim 3 in which the filler is
silver.

5. The die attach adhesive according to claim 1 in which the filler is
tetrafluoroethylene.

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6. A vinyl ether compound having the structure:



20 in which

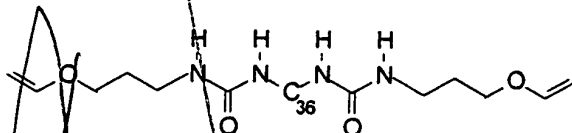
R^1 , R^2 , and R^3 are independently hydrogen, a methyl group, or an
ethyl group;

Q is an alkyl or alkylenoxy linear or branched chain having 1 to 12
carbon atoms;

25 Z is a branched or linear alkane, which may contain cyclic moieties, a
siloxane, a polysiloxane, a C_1 to C_4 alkoxy-terminated siloxane or

polysiloxane, a polyether, a polyester, a polyurethane, a poly(butadiene), or an aromatic, polyaromatic, or heteroaromatic group.

7. The vinyl ether compound according to claim 5 having the structure



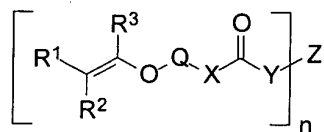
in which C_{36} is a mixture of isomers of a 36 carbon linear or branched chain.

8. An adhesive composition containing the vinyl ether compound according to claim 5, a free radical initiator or photoinitiator, and optionally a
10 conductive or nonconductive filler.

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9. An adhesive composition comprising a mixture of a maleimide compound and a vinyl ether compound, in which the vinyl ether compound has the structure



in which

n is 1 to 6;

R¹, R², and R³ are hydrogen, methyl or ethyl;

Q is a linear or branched chain alkyl or cycloalkyl having 1 to 12 carbon atoms; an alkyleneoxy chain having 1 to 12 carbon atoms, or aromatic or fused aromatic ring having 3 to 10 carbon atoms and optionally containing the heteroatoms O, N or S;

X and Y are independently O, NR¹, or S, with the proviso that both X and Y cannot be oxygen or sulfur;

Z is a branched or linear alkane, which may contain cyclic moieties, a siloxane, a polysiloxane, a C₁ to C₄ alkoxy-terminated siloxane or polysiloxane, a polyether, a polyester, a polyurethane, a poly(butadiene), or an aromatic, polyaromatic, or heteroaromatic group.

10. The adhesive composition according to claim 9 in which for the vinyl ether compound:

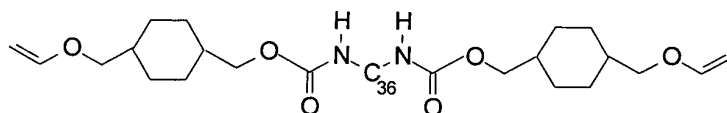
R¹, R², and R³ are hydrogen,

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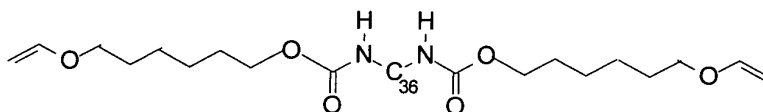
Q is a linear or branched chain alkyl or cycloalkyl having 1 to 12 carbon atoms; and

Z is a linear or branched chain alkyl having up to 36 carbon atoms.

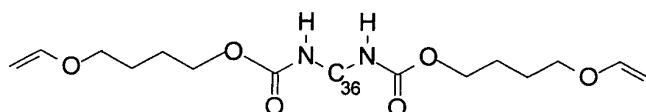
11. The adhesive composition according to claim 9 in which the vinyl ether compound has the structure:



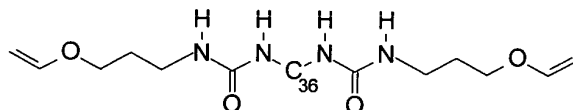
12. The adhesive composition according to claim 9 in which the vinyl ether compound has the structure:



13. The adhesive composition according to claim 9 in which the vinyl ether compound has the structure:



14. The adhesive composition according to claim 9 in which the vinyl ether compound has the structure:



15. The adhesive composition according to claim 9 further comprising a conductive or nonconductive filler.

16. The adhesive composition according to claim 15 in which the filler is silver.

17. The adhesive composition according to claim 15 in which the filler is tetrafluoroethylene.

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